

University of Groningen

Toward a further understanding of teachers' reports of early teacher–child relationships

Thijs, J.T.; Koomen, H.

Published in:
Early Childhood Research Quarterly, 24(2), 186-197

DOI:
[10.1016/j.ecresq.2009.03.001](https://doi.org/10.1016/j.ecresq.2009.03.001)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2009

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Thijs, J. T., & Koomen, H. (2009). Toward a further understanding of teachers' reports of early teacher–child relationships: examining the roles of behavior appraisals and attributions. *Early Childhood Research Quarterly*, 24(2), 186-197, 24(2), 186-197. <https://doi.org/10.1016/j.ecresq.2009.03.001>

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.



Toward a further understanding of teachers' reports of early teacher–child relationships: Examining the roles of behavior appraisals and attributions

Jochem Thijs ^{a,*}, Helma M.Y. Koomen ^b

^a Department of Interdisciplinary Social Science, Utrecht University, Heidelberglaan 2, 3584 CS Utrecht, The Netherlands

^b University of Amsterdam, The Netherlands

ARTICLE INFO

Article history:

Received 11 July 2008

Received in revised form 3 March 2009

Accepted 8 March 2009

Keywords:

Early teacher–child relationships

Relationship reports

Kindergarten children

ABSTRACT

This study examined teachers' reports of early teacher–child relationships by focusing on their assessments of the severity and the causes of children's social behaviors. Eighty-one kindergarten teachers filled out questionnaires about socially inhibited, hyperactive, and average children ($n = 237$) selected from their own classes. Multilevel analyses indicated that teachers reported less close and more dependent relationships for the inhibited and hyperactive versus the average children, and more conflictual relationships for the hyperactive versus the average children. These differences were largely mediated by teachers' perceptions of children's personal behavior problems. In addition, we found that the teachers' control attributions for children's social behaviors increased the link between children's perceived (personal and social) problems and relationship closeness. Results further support the idea that teachers' relationship reports are personal, evaluative accounts rather than objective measures of teacher–child interactions.

© 2009 Elsevier Inc. All rights reserved.

1. Introduction

Several studies have shown that early teacher–child relationships are important determinants of children's socioemotional and academic functioning (Birch & Ladd, 1997; Hamre & Pianta, 2001; Howes, 2000; Silver, Measelle, Armstrong, & Essex, 2005). Most of the available research either tacitly or explicitly acknowledges that teacher and child both contribute to the bond between them. Yet, teacher–child relationships are more often examined as the product of attributes of children rather than as characteristics of teachers. For instance, studies have focused on the correspondence between mother–child and teacher–child relationships (e.g., Pianta, Nimetz, & Bennett, 1997) or examined the latter as child-specific determinants of classroom adaptation (cf., Birch & Ladd, 1998; Ladd & Burgess, 1999). This focus on the child is quite remarkable, particularly so because most of the available studies have relied on teacher reports.

More recently, researchers have begun to show how personal characteristics of teachers can influence their assessments of the teacher–child relationship (Hamre, Pianta, Downer, & Mashburn, 2008; Kesner, 2000; Mashburn, Hamre, Downer, & Pianta, 2006). The present study aims to expand upon this line of research by examining how teachers' reports of their relationships with different types of kindergartners (socially inhibited, hyperactive, and average) are related to their personal assessments of the severity and the causes of these children's behaviors. We hypothesized that it is teachers' appraisals and

* Corresponding author. Tel.: +31 30 253 5560; fax: +31 30 253 4733.
E-mail address: j.t.thijs@uu.nl (J. Thijs).

attributions rather than children's mere behavioral characteristics that affect teachers' perceptions of the teacher–child relationship. To our knowledge, these hypotheses have not been investigated before.

1.1. Teachers' reports of the teacher–child relationship

Teacher–child relationships are viewed as micro-systems with important implications for children's development. They consist of multiple interrelated components that involve characteristics of both child and teacher, and the interactions and communication between them (Pianta, Hamre, & Stuhlman, 2003). Central among these components are the perceptions both partners have about the relationship. Rather than neutral recordings of self–other interactions, these inside perceptions are personal representations colored by feelings, evaluations, beliefs, and expectations. Still, they have important consequences for actual teacher–child interactions, because they are psychologically real and influence the behaviors of each relationship partner (Pianta et al., 2003; Pianta & Nimetz, 1991; Stuhlman & Pianta, 2002).

Most of the research on student–teacher relationships has relied on teachers' relationship perceptions. A well-known instrument to assess these perceptions is the Student Teacher Relationship Scale (STRS; Pianta, 2001). With the STRS teachers can evaluate their relationships with individual students along the dimensions of closeness, dependency, and conflict. Closeness refers to the degree to which teacher and child interact and communicate in a warm, open, and positive manner. By contrast, dependency and conflict are negative relationship characteristics referring to, respectively, students' overdependence on their teachers, and the extent to which the relationship is characterized by anger and negativity (Pianta, 2001).

Only a few studies have paid attention to the degree of concordance between teachers' perceptions of the relationship (assessed with the STRS) and the perception of independent external observers (Howes & Ritchie, 1999; NICHD Early Child Care Research Network, 2003; Stuhlman & Pianta, 2002). With respect to the conflict dimension, the results of these studies consistently showed moderate agreement. However, dependency was not included, and results for closeness were inconclusive. A recent study of Doumen, Verschueren, and Buyse (2008) was the first to reveal moderate convergence between teacher and observer reports for all three relationship dimensions. These findings attest to the subjective nature of teachers' perspectives on the relationships with their students.

Researchers have used the STRS to show that the quality of the teacher–child relationship depends on a wide variety of child characteristics, including children's behavioral orientation (Birch & Ladd, 1998; Ladd & Burgess, 1999), relationships with parents (Howes & Matheson, 1992; Rydell, Bohlin, & Thorell, 2005), temperament and language skills (Rudasill, Rimm-Kaufmann, Justice, & Pence, 2006), second language command (Fumoto, Hargreaves, & Maxwell, 2007), and intellectual disability (Eisenhower, Blaker, & Blacher, 2007). Less is known, however, about teachers' contributions to the teacher–child relationship. Recent research by Mashburn and colleagues (2006) revealed systematic differences between teachers in their reports of relationships with individual students. Using multilevel modeling, these authors found that 33% of the variance in closeness in their sample was at the teacher level. Accordingly, significant relations have been reported between STRS ratings and individual teacher characteristics, including self-efficacy, depressive feelings, teaching experience, and personal attachment history (Hamre et al., 2008; Kesner, 2000; Mashburn et al., 2006).

In this study, we examined teachers' contributions to their reports of relationships with individual students, by focusing on their unique and subjective assessments (appraisals and attributions) of each student's social behaviors. Thus, unlike the aforementioned studies, our main focus was not so much on the differences *between* teachers, but on the variation *within* their relationship ratings. We wanted to obtain variation within teachers, but were hesitant to ask too much of their time. Hence, rather than examining teachers in relation to all their students, we questioned them about three different types of children: kindergartners selected as either socially inhibited, hyperactive, or average (i.e. noninhibited and nonhyperactive). Social inhibition and hyperactivity are representative of the two broadband categories of problem behavior, i.e. internalizing and externalizing behaviors (Wenar & Kerig, 2000). We focused on these subcategories to facilitate the selection of children with non-overlapping behaviors. Data from our previous research (Thijs, Koomen, de Jong, van der Leij, & van Leeuwen, 2004) indicated that, unlike internalizing and externalizing behaviors, hyperactivity and social inhibition were negatively related. Socially inhibited children tend to be fearful and wary in challenging social situations, and may go unnoticed in classroom situations (Asendorpf, 1993; Rubin & Burgess, 2001). By contrast, hyperactive children show motor restlessness and are frequently off task (Hinshaw, 1987; Wenar & Kerig, 2000). Although contradictory findings have been reported for conflict, there are indications that teachers perceive more dependent and especially less close relationships with inhibited children compared to noninhibited children (Birch & Ladd, 1998; Ladd & Burgess, 1999; Rudasill et al., 2006; Rydell et al., 2005). It also appears that teachers rate their relationships with hyperactive children as less close, more dependent, and especially more conflictual (Birch & Ladd, 1998; Ladd & Burgess, 1999). In keeping with these findings, we expected to find large differences in teachers' relationship ratings for the three types of children.

1.2. Behavior appraisals

In clinical child psychology, behaviors are often evaluated in terms of their consequences. According to Rutter (1975), child behavior can be considered problematic if it causes a child's suffering, impedes in his or her socioemotional functioning, interrupts typical development, and/or negatively affects others. One assumption is that professional educators and teachers are attentive to the personal and social consequences of young children's behaviors (see Chazan, Laing, & Harper, 1987). Thus,

the present research used Rutter's criteria to examine teachers' appraisal of social behaviors of inhibited, hyperactive, and average children. Research suggests that childhood social inhibition and hyperactivity generally fulfill the first three criteria. Socially inhibited children tend to experience anxiety and insecurity (Rubin & Asendorpf, 1993), and may develop depressive symptoms (Gazelle & Ladd, 2003) and feelings of social incompetence (Hymel, Rubin, Rowden, & LeMare, 1990). Likewise, there are indications that hyperactive children are more depressed (Treuting & Hinshaw, 2001), less socially skilled (DeWolve, Byrne, & Bawden, 2000; Merrell & Wolfe, 1998), and have more risk for developing learning problems and behavior difficulties (McGee, Partridge, Williams, & Silva, 1991). Although teachers may sometimes rate internalizing behaviors as less serious than externalizing behaviors (Chang & Sue, 2003), they are probably aware of these negative personal problems for both the inhibited and the hyperactive child. However with respect to negative social problems, Rutter's (1975) fourth criterion, we can anticipate a clear difference between teachers' appraisals of socially inhibited versus hyperactive children. Due to their quiet and restrained behaviors, inhibited children are unlikely to annoy or bother their classmates and teachers (cf., Coplan & Rubin, 1998; Rubin & Asendorpf, 1993). By contrast, hyperactive children tend to have a negative influence on others as they often display disturbing behaviors that frequently go together with conduct problems or aggression (Hinshaw, 1987; Klein & Mannuzza, 1991).

In the present study, we evaluated the hypothesis that teachers' appraisals of children's behavior mediate the differences in the quality of the relationship reported for different types of children. We anticipated, for example, that teachers would report sharing less close relationships with inhibited versus average children due to the larger (perceived) personal problems of the former. We had two reasons for this until now unexamined expectation. First, as personal representations, teachers' relationship perceptions involve subjective evaluations, rather than neutral observations of children and their behaviors (see Mashburn et al., 2006; Pianta et al., 2003). To the extent that teachers' appraisals are also subjectively biased, they are likely to explain the link between children's behavior characteristics and teachers' relationship reports. Second, insofar as teachers' appraisals provide accurate descriptions of the problematic aspects of children's behavior characteristics, these appraisals may have a greater impact on teacher–child interactions than these characteristics themselves. Children who experience more serious personal suffering and a greater lack of social competence are probably hindered in forming and maintaining favorable relationships with their teacher. Moreover, teachers may have difficulties interacting with children whose behaviors are disturbing to others.

1.3. *Attributions*

To further examine the subjective nature of teachers' reports of the teacher–child relationship we also assessed their attributions for children's social behaviors. There is clear evidence that causal attributions (or lay explanations) are important for the perceptions and quality of intimate adult relations (see e.g., Bradbury & Fincham, 1990; Collins, Ford, Guichard, & Allard, 2006). However, little is known about the impact of attributions on teachers' representations of the teacher–child relationship. According to interpersonal attribution theory (Weiner, 1995, 2000), people's causal attributions for the outcomes received by others predict their emotional reactions toward them. Interpersonal attributions can be characterized into three dimensions: *locus*, involving the question whether the perceived cause lies within or outside the other; *stability*, the extent to which the perceived cause is stable over time; and *control*, the extent to which the other is presumed to have control over his or her outcomes. The last of these dimensions appears to be most important for people's interpersonal judgments. When teachers attribute students' negative outcomes (e.g., school failure) to controllable factors (e.g., a lack of effort) they will hold these students responsible and hence react negatively toward them (e.g., by showing anger). However, when the same outcomes are attributed to uncontrollable factors (e.g., a lack of ability) positive emotional reactions such as sympathy or pity are more likely (Weiner, 1995, 2000). Although few studies have examined teachers' attributions toward children's classroom behaviors (Arbeau & Coplan, 2007), the available evidence indicates that teachers who think that students have control over their problem behaviors show negative emotional and behavioral reactions toward them (see for a review, Ho, 2004).

To date, no studies have considered how teachers' perceptions of the teacher–child relationship are affected by their attributions for children's social behaviors. However, as subjective representations, these perceptions reflect teachers' feelings about their students and their interactions with them (see Pianta et al., 2003). Hence, given the premises of interpersonal attribution theory, it is reasonable to expect that teachers' perceptions of control increase the impact of their appraisals of children's behavior on their relationship reports. It can be anticipated, for instance, that teachers will report less close relationships for children with more (perceived) personal behavior problems, but particularly so when these children are perceived to be in control of their own behaviors. In the present research, we evaluated this possibility by testing the interactions between teachers' appraisals of children's behavior characteristics and their attributions of control. For exploratory purposes and reasons of completeness, the other attribution dimensions, locus and stability, were also included in the analyses.

1.4. *Research goal and hypotheses*

The goal of this study was to investigate how teachers' reports of early teacher–child relationships are based upon their personal appraisals and attributions for children's social behaviors. Three main hypotheses were evaluated and summarized in Fig. 1. First, based upon the literature and previous research including teachers and children from the present study (Thijs, Koomen, & van der Leij, 2008), we anticipated that teachers would report less close and more dependent relationships for

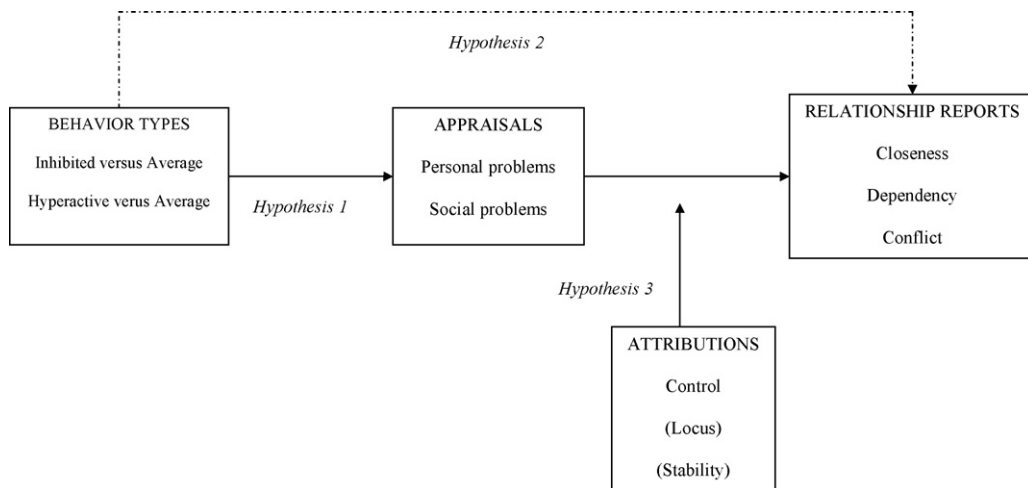


Fig. 1. Scheme of hypothesized relations.

the inhibited and hyperactive children versus the average children, and more conflicted relationships for the hyperactive versus the average children. Unlike, the present study, the previous research examined how teachers' relationship reports were associated with their self-reported pedagogical practices toward a larger group of kindergartners.

Second, we tested whether these anticipated differences in reported relationship quality were mediated by teachers' appraisals of children's social behaviors, i.e. their perceptions of children's personal and social problems. Mediation requires significant relations between the mediator and the independent and dependent variable (see Baron & Kenny, 1986). Accordingly, we tested the specific assumptions (a) that teachers would perceive more negative personal problems for inhibited and hyperactive versus average children, and more negative social problems for hyperactive versus average children, and (b) that teachers would report less favorable relationships for children whose behaviors they negatively appraised. The third main hypothesis was based on interpersonal attribution theory. We expected that the impact of perceived problems on the quality of the teacher–child relationship was moderated (i.e. increased) by teachers' attributions of control.

2. Method

2.1. Participants

For our study, we examined 81 teachers (77 females; $M_{age} = 41.5$ years, $SD = 10.2$) in relation to 237 children (120 females; $M_{age} = 70.0$ months, $SD = 6.8$) from regular kindergarten classes. To ensure that relationships had sufficiently developed, we questioned the teachers in the spring. In the Netherlands, kindergarten has two grades (K1 and K2) and starts on a child's fourth birthday. Less than 10% of the children were 4 years old, which implied that the large majority had at least 1 year of experience in kindergarten, and knew their teachers for more than 6 months.

Originally, teachers and children belonged to two independent Subsamples (A and B) from cities and villages in different parts of the Netherlands. These subsamples were merged to lend sufficient power to our analyses. Subsample A consisted of 39 teachers who were examined in relation to 36 inhibited, 34 hyperactive, and 36 average children. Subsample B consisted of 42 teachers examined in relation to 58 inhibited, 37 hyperactive, and 36 average children.

The selection of these children proceeded in two steps. First, three children were preselected for each teacher in Subsample A (one as inhibited, one as hyperactive, and one as average) and four children for each teacher in Subsample B (two as inhibited, one as hyperactive, and one as average). To this aim, teachers completed the BQTSYO-M (see below) for all children over 5 years old and if possible for all children in their classes, which yielded screening information for 1512 children. Children were preselected as inhibited if they scored as high as possible on the BQTSYO-M scale for social inhibition but not above the class means on the BQTSYO-M scales for hyperactivity and externalizing behavior; as hyperactive if they scored highest on BQTSYO-M scale for hyperactivity but not above the class means on the BQTSYO-M scales for social inhibition and internalizing behavior; and as average if they scored close to and slightly below the class means of all BQTSYO-M scales. Teachers were not informed of the (pre)selection guidelines.

The preselection did not yield exclusive groups of children. Due to practical circumstances (e.g., lack of parental permission) or comorbidity, the selection guidelines could not always be adhered to. Moreover, because of between-class differences on the BQTSYO-M means, children with exactly the same scores could be selected in one class but not in another. Hence, after data were collected for each of the preselected children, a second absolute selection was performed based upon cutoff values for the social inhibition and hyperactivity scales. These values represented the 66.67th percentiles in the total pool ($n = 1512$) from which the children were selected, i.e. 1.60 for social inhibition and 1.75 for hyperactivity. Inhibited children scored

Table 1

BQTSYO-M scores and gender distributions for the three types of selected children.

	Inhibited <i>n</i> = 94	Hyperactive <i>n</i> = 71	Average <i>n</i> = 72
Social Inhibition <i>M</i> (<i>SD</i>)	2.54 (.68)	1.05 (.10)	1.19 (.21)
Hyperactivity <i>M</i> (<i>SD</i>)	1.19 (.24)	3.04 (.61)	1.26 (.24)
Internalizing Behavior <i>M</i> (<i>SD</i>)	2.44 (.54)	1.24 (.24)	1.24 (.24)
Externalizing Behavior <i>M</i> (<i>SD</i>)	1.15 (.21)	2.33 (.58)	1.20 (.20)
Gender % Girl	56.4%	31.0%	62.5%

above the cutoff on social inhibition but not on hyperactivity; hyperactive children scored above the cutoff on hyperactivity but not on social inhibition; and average children did not score above the cutoffs on either of the variables.

Table 1 contains the mean BQTSYO-M scores and the gender distributions for the 237 children that were eventually selected. The three types of children differed with respect to gender, $\chi^2(2) = 16.26$, $p < .01$. There were more boys than girls in the hyperactive group but not in the other groups.

2.2. Measures

Teachers completed two different questionnaires. First, they filled out the BQTSYO-M for 1512 children, that is to say, the total group of pupils from which the children were selected. Next, they completed measures for appraisals (perceived problems), attributions, and relationship quality for the preselected children only.

2.2.1. BQTSYO-M

Children were selected with the modified version of the Behavior Questionnaire for 2–6-Year Olds (BQTSYO-M; Thijs et al., 2004). The BQTSYO-M is a short screening instrument containing subscales for social inhibition and hyperactivity, and broadband scales for internalizing and externalizing behaviors. Items are scored on a Likert scale ranging from 1 (*absolutely not characteristic*) to 4 (*very characteristic*). Social inhibition consists of five items including “Tries to avoid attention,” “Rather quiet does not say anything spontaneously,” and “Easily withdraws.” Children in Subsample A were preselected with a preliminary version of this subscale which contained three extra items (“Little active,” “Somewhat on his/her own,” and “Does not initiate any contact with other children.”) However, for the final selection, the five-item subscale was used.

Hyperactivity was measured with four items including “Has poor concentration” and “Restless”. Cronbach’s alpha was .85 for Social Inhibition, and .83 for Hyperactivity. The broadband scale for internalizing behavior consists of the items of social inhibition and nine other items including “Cries easily” and “Easily worries.” Externalizing behavior contains the four items pertaining to hyperactivity, and nine additional items including “Hits or kicks other children” and “Disobedient.” Alpha was .90 for internalizing and .92 for externalizing behavior.

2.2.2. Behavior appraisals

Teachers’ appraisals of children’s social behaviors were assessed with six items that were constructed for the present study. These items were based upon Rutter’s (1975) criteria for determining the seriousness of problem behavior, which are suffering (“The child suffers because of his/her social behavior” and “The child is happy with the way he/she is behaving” (reverse coded)), impediments in sociomotional functioning and interruption of normal development (“The behavior hinders the child in his/her social functioning” and “The child is restrained in his/her normal social-emotional development,”) and finally, negative effects on others (“This child’s behavior has a negative influence on other children” and “Other children are bothered by the social behavior of this child.”) A principal components analysis (PCA) with oblique rotation yielded two components explaining 81.8% of the variance. The two items for negative effects on others loaded strongly on the second component ($>.92$) but weakly on the first ($<|.13|$). These items were included in one measure for Perceived Social Problems. Cronbach’s alpha was .88 for this measure. The other four items had high loadings on the first but not on the second component ($>.83$ and $<|.14|$, respectively). They were combined into one scale for Perceived Personal Problems for which Cronbach’s alpha was .90. All items were rated on a Likert scale ranging from 1 (*no, certainly not!*) to 5 (*yes, certainly!*).

To obtain rudimentary support for the scales’ validity, we related them to a single-item measure assessing the perceived severity of children’s behavior (“Do you think the way the child generally behaves is problematic?”), which also ranged from 1 (*no, certainly not!*) to 5 (*yes, certainly!*). The item was strongly related to Perceived Personal Problems and Perceived Social Problems, respectively, $r = .64$ and $r = .66$, $ps < .01$. Moreover, multiple regression analysis showed that the two appraisal scales uniquely predicted the scores on the severity item (respectively, $\beta = .42$ and $\beta = .45$, $ps < .01$) explaining 56% of its variance.

2.2.3. Attributions

To assess teachers’ causal attributions for children’s social behaviors we used three items adapted from Hastings and Rubin (1999). Teachers were presented with three questions representing the attribution dimensions of locus, stability, and control, and were asked to select a position on a continuous line ranging from 1 to 10 for each question. For *locus* the question was “Why does the child behave toward others the way he/she does?”, with answers varying between (1) “Because of his/her class- or school environment” and (10) “Because of his/her personality.” *Stability* was assessed by asking teachers to what extent the child’s social behavior was temporary (1) versus permanent (10). Finally, *control* was assessed with the question

Table 2

Intercorrelations, means, and standard deviations for all continuous variables.

	1	2	3	4	5	6	7	M	SD	Range	ICC
1. Personal Problems								2.59	.93	1.00–5.00	.00
2. Social Problems	.49**							2.24	1.07	1.00–5.00	.00
3. Locus (internal)	.14*	.03						7.42	1.80	2.00–10.00	.21**
4. Stability	–.09	.00	.22**					6.87	1.94	1.00–10.00	.05
5. Control	–.61**	–.47**	–.10	.06				6.05	2.46	1.00–10.00	.07
6. Closeness	–.43**	–.21**	–.05	.13	.23**			4.07	.53	2.50–5.00	.03
7. Dependency	.39**	.34**	.11	–.03	–.34**	–.02		2.63	.76	1.00–4.83	.09
8. Conflict ^a	.38**	.71**	.05	.00	–.34**	–.27**	.38**	1.98	.65	1.00–3.67	.00

^a Data available for Subsample B only ($n = 131$).* $p < .05$.** $p < .01$.

“To what extent does the child have control over his/her social behavior?” Answers ranged from (1) “Does not control his/her behavior” to (10) “Controls his/her behavior.”

2.2.4. Teacher–child relationship

Teachers' reports of their relationships with each of the children were assessed with preliminary and abbreviated versions of the Closeness, Dependency, and Conflict subscales from the authorized Dutch adaptation of the Student-Teacher Relationship Scale (Koomen, Verschueren, & Pianta, 2007). As with the original STRS (Pianta, 2001), sufficient to good psychometric properties have been reported for this Dutch adaption, including a clear three-factor structure, satisfactory internal consistency scores, and validity in relation to observed relationship quality, teacher stress indices, children's social-emotional functioning, and behavioral engagement (Doumen et al., 2008; Koomen et al., 2007). All teachers completed the Closeness and Dependency subscales. The Conflict measure was completed in Subsample B only. Because teachers in Subsample A were also involved in interviews, we wanted to minimize the burden of data collection for them. Therefore we assessed only one negative aspect of their relationship perceptions (i.e. dependency, rather than dependency and conflict).

Closeness consisted of six items such as “This child seems to feel secure with me” and “I share a warm relationship with this child.” For this scale, Cronbach's alpha was .82. Dependency was measured with six items yielding an alpha of .83. Sample items are “This child needs to be continually confirmed by me” and “This child asks for my help when he/she really does not need help.” Conflict contained six items including “This child easily becomes angry with me” and “This child feels that I treat him/her unfairly.” Cronbach's alpha was .83. For all scales, the same five-point response format as for personal and social problems was used. The previous study, which included teachers and children from the present subsamples, showed that the three abbreviated subscales represent separate constructs (Thijs et al., 2008).

Table 2 contains means, standard deviations, and ranges for all measures in the second questionnaire. For each measure, skewness was below |1.00| and kurtosis was below |1.01|.

2.3. Analyses

As each teacher provided reports on three or four of their students, data for individual children were probably not statistically independent. To account for these dependencies, our data were analyzed with multilevel analyses in MLwiN version 2.0 (Rasbash, Browne, Healy, Cameron, & Charlton, 2004). Two levels were specified: Level 1 pertaining to the individual children reported on by each teacher ($n = 237$), and Level 2 pertaining to each teacher ($n = 81$). All models were estimated using the Restricted Iterative Generalized Least Squares algorithm, and relative model improvement was assessed by comparing the fit (deviance) of nested models. Differences between these statistics follow a Chi-square distribution, and degrees of freedom are given by the differences in numbers of parameters (Snijders & Bosker, 1999). In the analyses, the differences between socially inhibited, hyperactive, and average children were examined by means of dummy variables.

3. Results

3.1. Preliminary analyses

Before testing our hypotheses, we performed three preliminary analyses. First, we inspected the intercorrelations of all continuous variables (shown in the left part of Table 2). The two measures for perceived problems were positively related. Moreover, they showed similar relations to five of the six other measures: Teachers attributed less control to children with personal and/or social behavior problems, and teachers reported less close, and more dependent and conflictual relationships for these children. Next, the locus dimension was positively related to the dimension of stability and the perception of personal consequences, and control was associated with reports of closer, and less dependent and less conflictual relationships.

Second, we examined whether there were systematic differences between teachers on all variables in Table 2. To this aim, so-called intercept-only models were specified in MLwiN. These models yield estimates of the intraclass correlation

Table 3

Multilevel effects of behavior type, gender, and personal problems on closeness and dependency.

	Closeness Model 1	Dependency Model 1	Conflict Model 1	Closeness Model 2	Dependency Model 2	Conflict Model 2
<i>Predictors</i>						
Inhibited (versus average)	-.751**	.465**	-.257	-.276	.096	-.525**
Hyperactive (versus average)	-.464**	.754**	1.246**	.051	.354*	.886**
Gender	-.086	-.113	-.031	-.077	-.119	-.013
Personal problems	–	–	–	-.411**	.319**	.311**
<i>Variance</i>						
Level 1 (Child)	.841	.786	.491	.731	.747	.433
Level 2 (Teacher)	.073	.125	.126	.069	.091	.110
Total (% explained)	.914 (8.6%)	.911 (8.9%)	.617 (38.3%)	.800 (20.0%)	.838 (16.2%)	.543 (45.7%)
Deviance	645.827	642.314	299.117	613.026	622.949	281.216

* $p < .05$.** $p < .01$.

coefficient (ICC) which represents the proportion of total variance at Level 2 (between teachers; see Snijders & Bosker, 1999). As shown in the right column of Table 2, the ICC was significant for locus only. This means that some teachers systematically made more internal attributions than others. For the remaining variables there were no systematic differences between teachers. Note, however, that the lack of between-teacher variance only applies to the present sample. Due to our selection of a limited number of different children, the conclusion that teachers in general do not differ in their appraisals, attributions, or relationship perceptions is unwarranted.

Finally, we tested whether there were differences between the two subsamples on all variables in Table 2 except conflict. Because teachers were nested within these subsamples, we could add a third level to our two-level intercept-only models. For each variable, the fit of the three-level model did not exceed the fit of the two-level model ($p > .05$). This indicated that the two subsamples had similar mean scores and, hence, that it was appropriate to merge them. The third (between subsample) level was not included in the following analyses.

3.2. Relationship differences and mediation

To examine whether teachers reported significant differences in relationship quality for the three types of children, closeness, dependency, and conflict were regressed on two dummy variables representing the inhibited (1) versus the other (0) children, and the hyperactive (1) versus the other (0) children, as well as the covariate gender. Because the first two variables were simultaneously included, their effects represented the differences between the inhibited and hyperactive versus the average children, respectively.

Results are shown under Model 1 in Table 3. Children's behavior characteristics had significant effects on all relationship variables. Teachers reported less closeness and more dependency for their relationships with the inhibited and hyperactive children as compared to the average children. In addition, teachers in Subsample B reported more conflict for the hyperactive versus the average children.

Next, we examined whether these differences were mediated by teachers' perceptions of children's behavior problems. Mediation is present when the link between an independent variable x and a dependent variable y is substantially reduced when a third variable is included as an additional predictor. A variable z can be considered as a potential mediator if, in addition to the link between x and y , two relations are significant: First, x should be a significant predictor of z , and second, z should be significantly related to y (see Baron & Kenny, 1986). As shown in Table 2, the second condition held for personal problems as well as social problems. Both measures were negatively related to closeness, and positively to dependency and conflict. To examine the first condition, two multilevel models were tested in which both appraisal variables were regressed on the dummy variables for behavior type and gender. Results indicated that teachers reported more personal problems for the inhibited and hyperactive versus the average children (respectively, $b = 1.158$, and $b = 1.258$, both $p < .01$), and more social problems for the hyperactive (but not the inhibited) children ($b = 1.538$, $p < .01$). Thus, it seemed appropriate to examine the mediating roles of personal and social problems. However, further inspection suggested that there was a collinearity problem for the latter. Whereas the dummy variables for behavior type (and gender) explained 29.7% of the variance of personal problems, they accounted for 52.8% of the variance in social problems. Moreover, the point-biserial correlation (r_{pb}) between social problems and the dummy variable for the hyperactive children was .72 (and .68 in Subsample B) which was too high to include both variables (see Tabachnick & Fidell, 2001). Hence, the variable social problems was not examined in the mediation analyses.

To test the mediating role of perceived personal problems, this variable was added as a predictor to the regression models. Results are shown under Model 2 (Table 3). When the effect of personal problems was partialled out, teachers no longer reported less close relationships for the inhibited and hyperactive versus the average children. Next, the difference in dependency was no longer significant for the inhibited versus the average children, and considerably reduced for the hyperactive versus the average children (from $b = .754$, $p < .01$, to $b = .354$, $p < .05$). To examine whether

Table 4

Multilevel effects of personal and social problems, attributions, and their interactions.

	Closeness Model 1	Dependency Model 1	Conflict Model 1	Closeness Model 2	Dependency Model 2	Conflict Model 2
<i>Predictors</i>						
Personal problems	–.483**	.291**	.037	–.459**	.228**	.009
Social problems	.001	.188**	.721**	–.115	.168*	.733**
Control	–	–	–	–.071	–.120	–.053
Personal problems* control	–	–	–	–.160*	–.028	–.017
Social problems* control	–	–	–	–.154*	.021	.049
<i>Variance</i>						
Level 1 (Child)	.748	.749	.385	.717	.745	.392
Level 2 (Teacher)	.072	.077	.120	.024	.083	.120
Total (% explained)	.820 (18.0%)	.826 (17.4%)	.505 ()	.741 (25.9%)	.828 (17.2%)	.512 (48.8%)
Deviance	620.769	622.256	271.843	595.209	619.663	270.859
Model improvement (df)	–	–	–	25.56 (3)**	2.593 (3)	(3)

* $p < .05$.** $p < .01$.

these reductions were substantial, Sobel tests were conducted (see MacKinnon, Warsi, & Dwyer, 1995). That is to say, we calculated the indirect effects of the group dummy variables on closeness and dependency through personal problems. Results indicated that these indirect effects were significant: respectively, $z = -4.95$ and $z = 4.04$ for the differences between inhibited and average children, and, respectively, $z = -4.93$ and $z = 4.02$ for the differences between hyperactive and average children, $ps < .01$. Hence, the differences in closeness and dependency reported for the inhibited and the hyperactive versus the average children could be partly explained by perceived personal problems (see Baron & Kenny, 1986).

When personal problems was added to the regression model for conflict (in Subsample B), there appeared to be an increase in the negative effect for inhibited versus average children (from $b = -.257$ ns, to $b = -.525$, $p < .01$). This effect indicated suppression rather than mediation, and it implies that teachers would have reported less conflict for inhibited versus average children in case of equal (perceived) personal problems. However, there was also a reduction in the effect for hyperactive versus average children (from $b = 1.246$ to $b = .886$, $ps < .01$) in Model 2 for conflict (see Table 3). Further analyses demonstrated that the indirect effect of this difference through personal problems was significant ($z = 3.77$, $p < .01$) indicating mediation there as well. Thus, again there was partial mediation, and teachers' perceptions of personal problems partially explained their reports of conflict for hyperactive as compared to average children.

3.3. Interactions between perceived problems and attribution dimensions

In our last set of analyses, we examined whether the effects of perceived problems were moderated by teachers' attributions of children's behaviors. As the dummy variables for behavior type and gender had generally less or no effect, respectively, independently of personal problems, we decided to drop them from the analyses. As an advantage, social problems could now be included as a predictor. Three regression models were tested for each relationship variable. First, closeness, dependency, and conflict were regressed on the two types of perceived problems to assess the unique effects of both. Results are shown in Table 4 (Model 1). As in the previous analyses, personal problems had a negative effect on closeness and a positive effect on dependency. However, it had no unique effect on conflict. The effect of social problems was nonsignificant for closeness but positive for dependency and for conflict. Hence, teachers reported more dependent and more conflictual relationships when perceiving children's behaviors to have a negative impact upon their classmates, irrespectively of the perceived problems on the children themselves.

In the second model, we included the control dimension as well as its interactions with the two types of problems as additional predictors. As shown in Table 4 (Model 2), the main effect of control was nonsignificant in all cases. However, for closeness, both personal and social problems had significant interactions with the dimension of control. To examine the nature of these interactions, we conducted two sets of simple slope analyses. Following the procedure suggested by Aiken and West (1991), we calculated the effects (simple slopes) of both types of problems on closeness under conditions of both low and high perceived control (one standard deviation below and one standard deviation above the mean, respectively). When perceived control was low, the negative effect of personal problems was comparatively small ($b = -.299$, $p < .01$) and the effect of social problems was nonsignificant. However, when perceived control was high, the negative effect of personal problems was comparatively large ($b = -.618$, $p < .01$), and social problems had a significant negative impact ($b = -.268$, $p < .05$). These effects are shown in Fig. 2.

Finally, we explored the role of stability and locus, i.e. the other attribution dimensions. We tested a third set of models by including these two dimensions and their interactions with the two types of problems as additional predictors. For all relationship variables, the resulting model improvement was nonsignificant ($p > .05$).

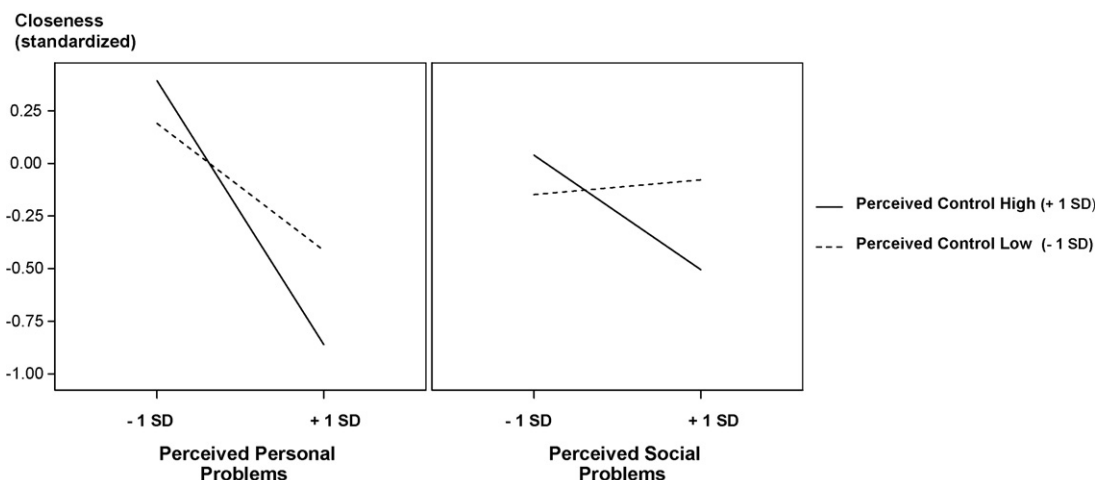


Fig. 2. Interactions between perceived control, and perceptions of personal and social problems.

4. Discussion

In this study, we examined the notion that teachers' reports of their relationships with individual students are based upon their personal assessments of the severity and causes of children's social behaviors. In doing so, we expanded upon other studies indicating that teachers' relationship ratings should be considered as personal accounts rather than neutral descriptions of teacher–child interactions (Hamre et al., 2008; Kesner, 2000; Mashburn et al., 2006).

We examined three main hypotheses. First, we anticipated that teachers would rate their relationships with socially inhibited and hyperactive children as relatively unfavorable. As expected and consistent with previous research (e.g., Birch & Ladd, 1998; Ladd & Burgess, 1999), teachers reported less close and more dependent relationships for the inhibited and hyperactive children as compared to the average children, and also more conflicted relationships for the hyperactive versus the average children. Second, we hypothesized that these relationship differences were mediated by teachers' appraisals of children's behaviors. We could only test this hypothesis for perceived personal problems. Our results were largely consistent with it. Teachers perceived more personal behavior problems for the inhibited and hyperactive children versus the average children, and these perceptions (partly) explained the differences in relationship quality reported for the three types of children. Somewhat unexpected, it also appeared that perceived personal problems suppressed a negative difference in conflict for the inhibited versus the average children. This indicates that should teachers have reported similar problems for inhibited and average children, they would have reported *less* conflict for the former. Taken all together, our results suggest that teachers' relationship reports did not so much reflect perceived child behavior characteristics but teachers' appraisals of these characteristics.

The third hypothesis pertained to the interaction between teachers' attributions of control and their perceptions of children's behavior problems. Based upon interpersonal attribution theory, we expected that teachers' relationship perceptions, as subjectively biased representations, would be particularly unfavorable toward children whose negatively appraised behaviors were attributed to controllable factors. This hypothesis was not supported with respect to dependency or conflict. However, it was fully confirmed in the case of closeness, both when perceptions of personal problems and when perceptions of social problems were involved. When teachers indicated that children had relatively little control over their social behaviors, the negative impact of perceived personal problems on closeness was comparatively small. Yet, when teachers perceived children to be in control of their own behaviors, the impact of perceived personal problems was relatively strong and social problems also had a negative influence. In hindsight, it makes sense that this interaction finding was obtained for closeness only. According to interpersonal attribution theory, perceptions of control influence one's emotional reactions toward others and their outcomes (Weiner, 1995, 2000). The STRS subscale for closeness contains items that directly tap into teachers' *feelings* about the relationship ("I share a warm relationship with this child" and "I do not always feel at ease with this child.") However, the dependency and conflict subscales exclusively entail evaluations and assessments of *children's behaviors and needs* within the context of the relationship (e.g., "This child asks for my help when he/she really does not need help" and "This child easily becomes angry with me", respectively).

Because the two appraisal variables were simultaneously included in the interaction analyses, we were also able to inspect their independent effects on the three relationship subscales. Although there were significant correlations between all appraisal and relationship measures (see Table 2), perceived personal problems had no unique effect on conflict, and perceived social problems did not uniquely predict closeness (except when the perceived control was high, see above). Children who were perceived as experiencing more personal suffering and social incompetence were probably seen as hindered in sharing close and independent bonds with their teachers. Yet, their relationships were not seen as more conflictual. Conversely, the

negative social impact of children's behaviors is probably seen as contributing to dependent and conflicted, but not to less close relationships. Presumably this is because, unlike closeness, dependency and conflict refer to the extent to which the child is seen as placing excessive demands on the teacher (e.g., for help and attention).

It is important to further consider the meanings of the present outcomes. As noted before, our finding that teachers' behavior appraisals mediated the differences in relationship quality for the three types of children suggests that their relationship reports are personal accounts rather than neutral descriptions of child functioning. However, this result does not warrant the conclusion that these reports misrepresent reality. Given what is known about the problems of social inhibition and hyperactivity, teachers could have appraised children's behaviors in a fairly correct fashion. It is thinkable that *actual* behavior problems – such as unhappiness, social dysfunctioning, and negative effects on others – have a greater impact on *actual* teacher–child interactions than merely inhibited or hyperactive behaviors. Only to the extent that teachers' appraisals were inaccurate then, did their relationship reports provide biased accounts of children's behavior. However, the finding that teachers' appraisals interacted with perceived control in the prediction of closeness suggests a more far-reaching conclusion. It indicates that teachers' reports about this relationship characteristic are colored by their personal explanations for unfavorable child outcomes. Critics could argue that teachers' control attributions might have been fairly adequate, just as their appraisals of children's behaviors. Still, it is unclear why the negative links between perceived problems and relationship closeness would be stronger for children who *actually* have more control over their own behaviors. In our opinion, it is perceived control and responsibility that matter, and the interaction findings demonstrate that teachers' closeness reports (partly) reflect biased evaluations of the child's functioning within the relational context.

An important question is whether this bias is expressed in teachers' actual interactions with the child, or only in their *perceptions* of these interactions. It is reasonable to assume that attributions influence teachers' reactions, and hence the quality of their actual interactions with children in the long run (see for a similar argument with respect to parent–child relationships, Bugental, Johnston, New, & Silvester, 1998). Unfortunately, we were unable to examine this because we did not have any objective measures (e.g., observations) of these interactions. However, the fact that control affected teachers' reports of closeness but not of dependency or conflict seems to support this assumption. As already indicated, only the closeness scale actually focused on the personal feelings of the teacher. Even if the present results pertain to teachers' perceptions only, these perceptions are still fundamental to the teacher–child relationship. The crucial point to make is that teachers' experiences, evaluations, and expectations of interactions with particular children affect their actual behaviors with them (Pianta et al., 2003; Stuhlman & Pianta, 2002).

Given the importance of relationship perceptions for actual interactions, and the ample evidence that teachers' reports of early teacher–child relationships are relevant to children's functioning and development, our findings also have practical relevance. Our results indicate that teachers' appraisals and attributions of children's social behaviors are crucial to their reports of the early teacher–child relationship. This implies, first of all, that school psychologists, researchers, and other users of the STRS, should be aware that the STRS and similar scales reflect above all, teachers' *personal accounts* rather than neutral descriptions of the child's attributes. This is fully consistent with the systems approach of teacher–child relationships (Pianta et al., 2003), which stipulates that using only one source of information, by definition, results in an incomplete assessment. To obtain a more complete view, researchers and practitioners need additional information from other perspectives, for example the student's and/or independent observer's point of view. This being said, our findings take nothing away from the usefulness of measures such as the STRS. Recently, Doumen et al. (2008) found that teachers' STRS ratings proved to be better predictors of children's (observed) behavioral classroom engagement than relationship ratings made by an outside observer. Hence, teachers' relationship reports may actually be more useful than those of independent others. Moreover, because of the asymmetric nature of the relationship, the teacher probably is the best starting point for interventions directed at improving the relationship, which in its turn may be relevant to advance the child's school adjustment. Changes by the teacher may have more impact on the relationship than changes in the child (Verschuere, 2008). Understanding how teachers' appraisals and attributions about children's social behaviors are linked to their relationships with them gives us specific ideas of where school psychologists could intervene. They could, for example, help teachers re-evaluate their relationships with particular children by making teachers aware of any biased perceptions in their appraisals of children. This could be beneficial to the children, particularly those facing socioemotional difficulties, but also to teachers themselves by increasing their job satisfaction (see Koomen et al., 2007).

To evaluate the present study, three qualifications should be considered. First, our analyses were limited because they were based upon cross-sectional data. Hence, no definite claims can be made about the suggested direction of effects. Yet, it should be noted that most of our results were consistent with our theoretically based predictions. Second, all data in this study were provided by teachers, including the information used to select the different types of children. Although kindergarten teachers can be regarded as reliable observers of the behaviors of young children (Ladd & Proffitt, 1996), future studies should use different sources to assess children's behaviors, and conduct observations of actual interactions between teachers and children. Finally, we examined a Dutch sample and relied on a Dutch (preliminary) version of the STRS. Hence, one could verify whether our results generalize to early childhood teachers in other countries. Since the Dutch educational system is comparable to that in other Western countries, we think that a generalization to other western countries is highly likely. However, future studies are needed to confirm this impression.

To summarize, the present study tried to contribute to the literature by examining how teachers' reports of early teacher–child relationships were related to their personal assessments of the causes and severity of children's behaviors. Our results indicate that it is not only children's behavior characteristics but teachers' appraisals and attributions that affect their

perceptions of the teacher–child relationship. Future research should take into account that teachers' relationship reports are personal and evaluative in nature.

Acknowledgments

This research was supported by grant 41121203 from the Netherlands Organization for Scientific Research. We thank Sylvie Poirier for proofreading the manuscript.

References

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Thousand Oaks, CA: Sage.
- Arbeau, K. A., & Coplan, R. J. (2007). Kindergarten teachers' beliefs and responses to hypothetical prosocial, asocial, and antisocial children. *Merill-Palmer Quarterly*, 53, 291–318.
- Asendorpf, J. B. (1993). Beyond temperament: A two-factorial coping model of the development of inhibition during childhood. In K. H. Rubin & J. B. Asendorpf (Eds.), *Social withdrawal, inhibition, and shyness in childhood* (pp. 265–289). Hillsdale, NJ: Erlbaum.
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173–1182.
- Birch, S. H., & Ladd, G. W. (1997). The teacher–child relationship and children's early school adjustment. *Journal of School Psychology*, 35, 61–79.
- Birch, S. H., & Ladd, G. W. (1998). Children's interpersonal behaviors and the teacher–child relationship. *Developmental Psychology*, 34, 934–946.
- Bradbury, T. N., & Fincham, F. D. (1990). Attributions in marriage: Review and critique. *Psychological Bulletin*, 107, 3–33.
- Bugental, D. B., Johnston, C., New, M., & Silvester, J. (1998). Measuring parental attributions: Conceptual and methodological issues. *Journal of Family Psychology*, 12, 459–480.
- Chang, D. F., & Sue, S. (2003). The effects of race and problem type on teachers' assessments of student behavior. *Journal of Consulting and Clinical Psychology*, 2, 235–242.
- Chazan, M., Laing, A., & Harper, G. (1987). *Teaching five to eight year-olds*. Oxford, UK: Blackwell.
- Collins, N. L., Ford, M. B., Guichard, A. C., & Allard, L. M. (2006). Working models of attachment and attribution processes in intimate relationships. *Personality and Social Psychology Bulletin*, 32, 201–219.
- Coplan, R. J., & Rubin, K. H. (1998). Exploring and assessing nonsocial play in the preschool: The development and validation of the Preschool Play Behavior Scale. *Social Development*, 7, 72–91.
- DeWolve, N. A., Byrne, J. M., & Bawden, H. N. (2000). ADHD in preschool children: Parent-rated psychosocial correlates. *Developmental Medicine & Child Neurology*, 43, 825–830.
- Doumen, S., Verschueren, K., & Buyse, E. (2008). Observed teacher–child interactions and teacher perceived relationship quality: Their concordance and associations with school engagement. In *Paper presented at the 30th ISPA International School Psychology Association Conference* Utrecht, The Netherlands.
- Eisenhower, A. S., Blaker, B. L., & Blacher, J. (2007). Early student–teacher relationships of children with and without intellectual disability: Contributions of behavioral, social, and self-regulatory competence. *Journal of School Psychology*, 45, 363–383.
- Fumoto, H., Hargreaves, D. J., & Maxwell, S. (2007). Teachers' perceptions of their relationships with children who speak English as an additional language in early childhood settings. *Journal of Early Childhood Research*, 5, 135–153.
- Gazelle, H., & Ladd, G. W. (2003). Anxious solitude and peer exclusion: A diathesis-stress model of internalizing trajectories in childhood. *Child Development*, 74, 257–278.
- Hamre, B. K., & Pianta, R. C. (2001). Early teacher–child relationships and the trajectory of children's school outcomes through eighth grade. *Child Development*, 72, 625–638.
- Hamre, B. K., Pianta, R. C., Downer, J. T., & Mashburn, A. J. (2008). Teachers' perceptions of conflict with young students: Looking beyond problem behaviors. *Social Development*, 17, 115–136.
- Hastings, P. D., & Rubin, K. H. (1999). Predicting mothers' beliefs about preschool-aged children's social behavior: Evidence for maternal attitudes moderating child effects. *Child Development*, 70, 722–741.
- Hinshaw, S. P. (1987). On the distinction between attentional deficits/hyperactivity and conduct problems/aggression in child psychopathology. *Psychological Bulletin*, 101, 443–463.
- Ho, I. T. (2004). A comparison of Australian and Chinese teachers' attributions for student problem behaviors. *Educational Psychology*, 24, 375–391.
- Howes, C. (2000). Social-emotional classroom climate in child care, child–teacher relationships and children's second grade peer relations. *Social Development*, 9, 191–204.
- Howes, C., & Matheson, C. C. (1992). Contextual constraints on the concordance of mother–child and teacher–child relationships. In R. C. Pianta (Ed.), *New directions for child development: Beyond the parent: The role of other adults in children's lives* (pp. 25–40). San Francisco, CA: Jossey-Bass.
- Howes, C., & Ritchie, S. (1999). Attachment organizations in children with difficult life circumstances. *Development and Psychopathology*, 11, 251–268.
- Hymel, S., Rubin, K. H., Rowden, L., & LeMare, L. (1990). Children's peer relationships: Longitudinal prediction of internalizing and externalizing problems from middle to late childhood. *Child Development*, 61, 2004–2021.
- Kesner, J. E. (2000). Teacher characteristics and the quality of child–teacher relationships. *Journal of School Psychology*, 38, 133–149.
- Klein, R. G., & Mannuzza, S. (1991). Long-term outcome of hyperactive children: A review. *Journal of the American Academy of Child and Adolescent Psychiatry*, 30, 383–387.
- Koomen, H. M. Y., Verschueren, K., & Pianta, R. C. (2007). *Leerling-Leraar Relatie Vragenlijst, Handleiding [Student–teacher relationship questionnaire. Manual]*. Houten: Bohn Stafleu Van Loghum.
- Ladd, G. W., & Burgess, K. B. (1999). Charting the relationship trajectories of aggressive, withdrawn, and aggressive/withdrawn children during early grade school. *Child Development*, 70, 910–929.
- Ladd, G. W., & Profilet, S. M. (1996). The child behavior scale: A teacher-report measure of young children's aggressive, withdrawn, and prosocial behaviors. *Developmental Psychology*, 32, 1008–1024.
- MacKinnon, D. P., Warsi, G., & Dwyer, J. H. (1995). A simulation study of mediated effect measures. *Multivariate Behavioral Research*, 30, 41–62.
- Mashburn, A. J., Hamre, B. K., Downer, J. T., & Pianta, R. C. (2006). Teacher and classroom characteristics associated with teachers' ratings of prekindergartners relationships and behaviors. *Journal of Psychoeducational Assessment*, 24, 367–380.
- McGee, R., Partridge, F., Williams, S., & Silva, P. A. (1991). A twelve-year follow-up of preschool hyperactive children. *Journal of the American Academy of Child and Adolescent Psychiatry*, 30, 224–232.
- Merrell, K. W., & Wolfe, T. M. (1998). The relationship of teacher-rated social skills deficits and ADHD characteristics among kindergarten-age children. *Psychology in the Schools*, 35, 101–110.
- NICHD Early Child Care Research Network. (2003). Social functioning in first grade: Associations with earlier home and child care predictors and with current classroom experiences. *Child Development*, 74, 1639–1662.
- Pianta, R. C. (2001). *STRS: Student–teacher relationship scale: Professional manual*. Odessa, FL: Psychological Assessment Resources.
- Pianta, R. C., Hamre, B., & Stuhlman, M. (2003). Relationships between teachers and children. In W. M. Reynolds & G. E. Miller (Eds.), *Handbook of psychology: Educational psychology* (pp. 199–234). Hoboken, NJ: Wiley.

- Pianta, R. C., & Nimetz, S. L. (1991). Relationships between children and teachers: Associations with classroom and home behavior. *Journal of Applied Developmental Psychology*, 12, 379–393.
- Pianta, R. C., Nimetz, S. L., & Bennett. (1997). Mother–child relationships, teacher–child relationships, and school outcomes in preschool and kindergarten. *Early Childhood Research Quarterly*, 12, 263–280.
- Rasbash, J., Browne, W., Healy, M., Cameron, B., & Charlton, C. (2004). *MLwiN Version 2.0*. New York: Multilevel Models Project Institute of Education.
- Rubin, K. H., & Asendorpf, J. B. (1993). Social withdrawal, inhibition and shyness in childhood: Conceptual and definitional issues. In K. H. Rubin & J. B. Asendorpf (Eds.), *Social withdrawal, inhibition, and shyness in childhood* (pp. 3–17). Hillsdale, NJ: Erlbaum.
- Rubin, K. H., & Burgess, K. B. (2001). Social withdrawal and anxiety. In M. W. Vasey & M. R. Dadds (Eds.), *The developmental psychopathology of anxiety* (pp. 407–434). London: Oxford University Press.
- Rudasill, K. M., Rimm-Kaufmann, S. E., Justice, L. M., & Pence, K. (2006). Temperament and language skills as predictors of teacher–child relationship quality in preschool. *Early Education and Development*, 17, 271–291.
- Rutter, M. (1975). *Helping troubled children*. Harmondsworth, UK: Penguin Books.
- Rydell, A. M., Bohlin, G., & Thorell, L. B. (2005). Representations of attachment to parents and shyness as predictors of children's relationships with teachers and peer competence in preschool. *Attachment and Human Development*, 7, 187–202.
- Silver, R. B., Measelle, J. R., Armstrong, J. M., & Essex, M. J. (2005). Trajectories of classroom externalizing behavior: Contributions of child characteristics, family characteristics, and the teacher–child relationship during the school transition. *Journal of School Psychology*, 43, 39–60.
- Snijders, T. A. B., & Bosker, R. J. (1999). *Multilevel analysis. An introduction to basic and advanced multilevel modeling*. London: Sage.
- Stuhlman, M. W., & Pianta, R. C. (2002). Teachers' narratives about their relationships with children: Associations with behavior in classrooms. *School Psychology Review*, 31, 148–163.
- Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics* (4th Ed.). Boston, MA: Allyn and Bacon.
- Thijs, J. T., Koomen, H. M. Y., de Jong, P. F., van der Leij, A., & van Leeuwen, M. G. P. (2004). Internalizing behaviors among kindergarten children: Measuring dimensions of social withdrawal with a checklist. *Journal of Clinical Child and Adolescent Psychology*, 33, 802–812.
- Thijs, J. T., Koomen, H. M. Y., & van der Leij, A. (2008). Teacher–child relationships and pedagogical practices: Considering the teacher's perspective. *School Psychology Review*, 37, 244–260.
- Treuting, J. J., & Hinshaw, S. P. (2001). Depression and self-esteem in boys with attention-deficit/hyperactivity disorder: Associations with comorbid aggression and explanatory attributional mechanisms. *Journal of Abnormal Child Psychology*, 29, 23–39.
- Verschuere, K. (2008). Young children's relational experiences in the classroom: Their antecedents and consequences for development. In *Invited keynote lecture at the 30th ISPA International School Psychology Association Conference Utrecht, The Netherlands*.
- Weiner, B. (1995). *Judgments of responsibility: A foundation for a theory of social conduct*. New York: Guilford Press.
- Weiner, B. (2000). Intrapersonal and interpersonal theories of motivation from an attributional perspective. *Educational Psychology Review*, 12, 1–14.
- Wenar, C., & Kerig, P. (2000). *Developmental psychopathology: From infancy through adolescence* (4th Ed.). New York: McGraw-Hill.